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CURVE

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Abstract

CURVE is a program which allows selected portions of a data curve to be displayed in an expanded form.

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CURVE is a program which allows the user to draw a curve for display on the oscilloscope and then to select various portions of this curve for display in an expanded form. The program occupies the following memory locations:

20-166
400-422
476-517
1000-1777

Operating instructions are as follows:

1. Set right switches to determine the amount of time to be used in creating the curve; the larger the right switch setting is, the longer it will take to draw the curve. Setting the right switches to 1000 gives the user a reasonable length of time in which to draw the curve.
2. Press START 400. A curve to be displayed in a subsequent part of the program may now be drawn, using Knob 3. As the knob is turned, an intensified point will move across the scope; its vertical coordinate is computed from sampling Knob 3.

When the point has reached the righthand edge of the scope, that is, when Knob 3 has been sampled 1000_8 times, the curve composed of all 1000_8 intensified points will be displayed.

Turning Knob 0 varies the vertical position of the curve.

Turning Knob 1 varies the horizontal position of a cursor which rides along the curve; the cursor is used to select the portion of the curve to be expanded and displayed above the first curve. The number displayed in the top right corner of the scope is the value obtained by sampling Knob 3, during the original

drawing of the curve, at the position selected by the cursor. This point and the 377_8 points to its right on the first curve are those displayed in expanded form in the upper curve. In both curves the entire horizontal range of the scope is used; in the lower curve 1000_8 points are displayed, whereas in the upper curve only 400_8 points are displayed. This upper curve is somewhat out of proportion in that, while the horizontal scale is doubled relative to the lower curve, the vertical scale is unchanged. Turning Knob 2 varies the vertical position of the expanded curve.

Instead of drawing his own curve as described above, the user may choose to use the program to display any 1000_8 data as a curve, provided the data are in the range ± 177 . The following operating instructions should be followed, instead of those described above:

1. Transfer the data into quarters two and three, that is, memory registers 1000 through 1777.
2. Press START 20. The data will be displayed on the oscilloscope as a curve. Knobs 0, 1, and 2 are used as described above; Knob 3 is unused in this case.

CURVE,0

	VALUE	LINE
1A	0035	45
1B	0027	37
1C	0074	106
1D	0055	66
1X	0124	137
2A	0111	123
2B	0112	125
2C	0156	171
2D	0127	142
2X	0404	7

CURVE,1 LN=1

P CONT

LCURVE

B400 DRAW CURVE

400 0074 SET i 14
401 0777 777
402 0075 SET i 15
403 0777 777
404 0076 #2X SET i 16
405 7774 -3
406 0516 RSW
407 1120 ADA i
410 7776 -1
411 0450 AZE
412 6407 JMP P-3
413 0236 XSK i 16
414 6406 JMP P-6
415 0103 SAM 3
416 1075 STA i 15
417 0174 DIS i 14
420 0215 XSK 15
421 6404 JMP 2X
422 6020 JMP 20

LREAD KNOB 0 AND DISPLAY CURVE

B20

20 0062 SET i 2
21 0777 777
22 0063 SET i 3
23 0777 777
24 0100 SAM 0
25 0241 ROL 1
26 4035 STC 1A
27 1022 #1B LDA i 2
30 2035 ADD 1A
31 0163 DIS i 3
32 0202 XSK 2
33 6027 JMP 1B
34 6036 JMP P+2
35 0000 #1A

LREAD KNOB 1 AND DISPLAY CURSOR

36 0066 SET i 6
37 7752 -25
40 0101 SAM 1
41 1120 ADA i
42 0200 200
43 0241 ROL 1
44 4004 STC 4
45 2004 ADD 4
46 1120 ADA i
47 1000 1000
50 4005 STC 5
51 2005 ADD 5
52 4007 STC 7
53 1005 LDA 5
54 2035 ADD 1A
55 0144 #1D DIS 4
56 1120 ADA i
57 0001 1

CURVE,2 LN=71

P CONT

60 0226 XSK i 6

61 6055 JMP 1D

62 0062 SET i 2

63 0777 777

64 0011 CLR

65 2005 ADD 5

66 1120 ADA i

67 7776 -1

70 4005 STC 5

71 0102 SAM 2

72 0241 ROL 1

73 4111 STC 2A

74 1025 #1C LDA i 5

75 2111 ADD 2A

76 0162 DIS i 2

77 1020 LDA i

100 0001 1

101 2002 ADD 2

102 4002 STC 2

103 0205 XSK 5

104 6106 JMP P+2

105 6112 JMP 2B

106 0202 XSK 2

107 6074 JMP 1C

110 6112 JMP 2B

111 0000 #2A

112 0061 #2B SET i 1

113 0660 660

114 0070 SET i 10

115 0340 340

116 0071 SET i 11

117 7774 -3

120 0072 SET i 12

121 0476 476

122 1007 LDA 7

123 1060 STA i

124 0000 #1X

125 0451 APO

126 6156 JMP 2C

127 0061 #2D SET i 1

130 0754 754

131 0011 CLR

132 2124 ADD 1X

133 1560 BCL i

134 7770 7770

135 0241 ROL i

136 1120 ADA i

137 0500 500

140 4012 STC 12

141 2010 ADD 10

142 1752 DSC 12

143 1772 DSC i 12

POINT

HORIZONTAL SKIPS

EVERY OTHER

DISPLAY KNOB 3

SAMPLE VALUE FOR PT. SELECTED BY

KNOB 1

CURVE 3 LN=157

P CONT

144	1020	LDA i
145	7733	-44
146	2001	ADD 1
147	4001	STC 1
150	2124	ADD 1X
151	0343	SCR 3
152	4124	STC 1X
153	0231	XSK i 11
154	6131	JMP 2D+2
155	6020	JMP 20
156	0011	#2C CLR
157	2010	ADD 10
160	1752	DSC 12
161	1772	DSC i 12
162	0011	CLR
163	2124	ADD 1X
164	0017	COM
165	4124	STC 1X
166	6127	JMP 2D
		8476
476	0404	0404
477	0404	0404
500	4136	4136
501	3641	3641
502	2101	2101
503	0177	0177
504	4523	4523
505	2151	2151
506	4122	4122
507	2651	2651
510	2414	2414
511	0477	0477
512	5172	5172
513	0651	0651
514	1506	1506
515	4225	4225
516	4443	4443
517	6050	6050